

Editor

EXHIBITION

PRACTICAL A
VARIOUS

"Medici autem
remediis adhi
depellere, tot
recta ratio, p
modo innixa,

JOHN AN

*Editor of
Edinb. Medical & Surgical Journal*

A

TREATISE

ON

DROPSY,

EXHIBITING ITS NATURE, CAUSES, FORMS, SYMPTOMS,
PRINCIPLES OF TREATMENT,

AND

PRACTICAL APPLICATION OF THESE, IN THE USE OF THE
VARIOUS REMEDIES EMPLOYED FOR ITS CURE.

BY JAMES FORD, M. D.

“ Medici autem philosophia omnis in expiscandis morborum historiis, iisque remediis adhibendis, quæ experientiâ indice ac magistra, eosdem valent depellere, tota stat; observata tamen, ut alibi dixi, medendi methodo, quam recta ratio (non speculationum commentis, sed trito et naturali cogitandi modo innixa) ei dictaverit.”—SYDENHAM.

EDINBURGH:

JOHN ANDERSON, JUN. 55. NORTH BRIDGE STREET;

AND

SIMPKIN AND MARSHALL, LONDON.

MDCCCXXXIV.

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ADVERTISEMENT.

IN the following account, some diseases usually styled dropsical I have omitted, as being of minor importance, of less frequent occurrence, or to be treated by surgical means ; as, for example, hydrocele, &c. Hydrocephalus chronicus and hydrorachitis I have not described : They are incurable ; and, appearing principally at birth, or soon after, they probably depend on some connate or congenital defect of the parts concerned in them. Hydrocephalus acutus is obviously not a dropsy, in the proper acceptation of the word. The cause of it, whatever this may be, and about which there has been much dispute, produces, either from its own nature, or from the nature of the organ affected, namely, the brain—a train of peculiar symptoms, which have no right to be called dropsical, since they occur while yet no dropsical effusion is present, which effusion only takes place afterwards as a sequela of the former morbid action. Death has even occurred after all symptoms calculated to lead one to expect effusion ; and yet this has not been found. The consideration of this disease, though a most important one, is therefore certainly out of

place among strictly dropsical disorders. The species of *dropsy* which are of most importance, and which the physician is commonly called upon to treat, are those which I have described, namely, that of the thorax, of the abdomen, or of the cellular membrane.

J. FORD.

Dundee, 5th April 1834.

TREATISE ON DROPSY.

THERE is poured into the different cavities and interstices of the body, from the exhalant extremities of arteries, a serous or aqueous fluid, in order that the bad effects which would otherwise result from the attrition of contiguous parts may be prevented. By another device of nature, the redundant accumulation of this fluid is guarded against. The absorbent vessels, as they are called, open on the surfaces of the same cavities and interstitial spaces, imbibe the exhalation mentioned before it is collected in too great quantity, and convey it to the thoracic duct, whence, mixed with the chyle, it is afterwards transmitted to the general mass of circulating blood. The system is in health, as respects these two functions, exhalation and inhalation, or absorption, so long as a just equilibrium subsists between them. If, however, from any cause, the exhalants pour out too much fluid, or the absor-

bents remove too little, a preternatural collection occurs, and disease is produced. Such a loss of balance does frequently take place; and hence the different forms of dropsy. These have been variously named, according to the situation in which the morbid collection of water takes place: in the head, it is called hydrocephalus; in the breast, hydrothorax; in the investing membrane of the heart, hydrocardia; in the substance of the lungs, hydrops pulmonum, &c.; in the belly, ascites; in the general cellular tissue of the body, anasarca; or, if less considerable, œdema. There are also hydropes saccati, or encysted dropsies, the fluid being confined in preternatural cysts or membranous bags—these happen especially in the abdomen. Hydrophthalmia applies to the eye, &c.

It is very important to consider the modes in which such a derangement, as has been adverted to, of the due balance between the functions of exhalation and absorption may be brought about, and an hydropic accumulation of fluid so occasioned; because, notwithstanding that something of what has been advanced by physicians in regard to such morbid agency is merely hypothetical, yet by far the greatest and most interesting part of it is based on indisputable facts; and, by taking a view of the whole, we shall be enabled in many cases to judge with much accuracy, both as to the nature of the disease, and the best remedial means that can be applied to it. And in endeavouring to give such a

view of the causes of dropsy, it is right to observe, that though the serous accumulation is very differently situated in different cases, and the disease, therefore, in very many of its symptoms, of very various character, yet the sources of the malady have all a certain common nature, whatever be the form of it which they produce: and the *general* doctrine which may therefore be laid down, can, by an attention to the several organs and functions of the living system, be easily applied to each particular species.

The following are the causes which have generally been assigned for dropsy:—General debility, in whatever way induced, whether by bad diet, debauchery, exposure to cold and moisture, preceding diseases, or despondent affections of the mind—the taking in of a great quantity of thin and watery liquids—the stoppage of customary discharges, as of menses, piles, urine, perspiration, ulcers, &c.—and internal organic diseases.

Such is a cursory enumeration of the causes of dropsy. Let us now enlarge a little upon them severally, and endeavour to show how their respective agency is exerted in producing that deficiency of equilibrium between exhalation and absorption, which lands the person subjected to their influence in some form or other of the disease. And, first, that a general debility is frequently accessory to such a result, appears to be demonstrated by the occurrence of dropsy in almost all cases where such

a state of the system exists. Fevers, whether intermittent or continued, are very often succeeded by hydropic effusion; and there seems no doubt that the debilitated condition which these are so apt to induce, is intimately connected with this. Excessive evacuations, which so greatly reduce the strength, and are frequently followed by every symptom of universal debility, are very apt to be followed by a greater or less degree of dropsy. This debility affecting the general system, must also, of course, affect the exhalant extremities of the arteries which pour out the serum into the cavities and interstices of the body; for it cannot be matter of dispute, that a certain degree of healthful tone or energy is necessary to these, as well as to the other living actions; and it seems equally obvious, that the vessels destined to the removal of the exhaled fluid must participate in the same laxity, and therefore fail greatly in the performance of their office, or perhaps nearly altogether cease from it. Such a state of general debility is commonly indicated by the appearance of the patient—that paleness of the face, languor of the functions, and general torpor of the muscular powers, to which the designation of leucophlegmasia has been applied. A palsied limb is very apt to become œdematous—owing, as it would seem, to the loss of power affecting the exhalants and absorbents in the way alluded to. And that such a loss of power may operate generally in a weak and lax state of the system, is evident both

from the *à priori* consideration of the subject, and from the circumstance that a dropsy is often general in such cases ; and if the effusion is by any means lessened in one situation, it is apt to be increased in others, showing that the morbid agency is diffused over the whole body, and not topical, or confined to any particular part.

The spontaneous suppression of natural or customary evacuations probably operates in the same manner, and not so much at least in another way, which some have conceived as affording a very good explanation of the dropsy which is so produced. Dropsy, to a greater or less extent, may occur from the sudden interruption of a discharge from piles, from a stoppage of the menses, and such other circumstances of the kind as are fitted to occasion an increased quantity of fluids in the circulating system : and the idea of some physicians here has been, that there is a plethora occasioned in the veins, which, presenting an impediment to the free transmission of the blood from the arteries into these, turns an over-quantity of it upon the exhalants, and so leads to preternatural effusion. But there is commonly, there is every reason to presume, a morbid inadequacy in the living movements and functions previously to such stoppages as have been hinted at, and of which they are a consequence ; and such defect of vigour affords probably a better explanation of the supervening dropsy than that other of venous plethora ; although it is sufficiently probable

that it may also concur in producing the disease. And, finally, it is patent to observation, that in whatever way a great general weakness of the system has been induced, in such a condition dropsical effusion is a most common occurrence.

It has been supposed, and with much probability, that a predominance of thin or watery fluids in the blood-vessels may lead to dropsy—the proportion of the circulating mass which is fitted to run off by the exhalants being preternaturally large. Whether certain experiments, which have been made with the intention of settling this point, be conclusive or not,—for the throwing of water into the arteries of animals, though it has been found to be poured into the interstices of the body rather than to pass into the veins, is not perhaps sufficiently analogous to nature to remove all doubt on the subject,—it is yet certain, that a deterioration of the blood, by the taking in of excessive quantities of thin and aqueous liquids, is often connected with hydropic disease. When these are readily carried off from the system in the same proportion as they are supplied, as is often the case, by the several excretions, as by the skin or kidneys, no bad consequence is to be apprehended ; but if, at the same time that an excessive quantity is taken in, owing to any inadequacy of the functions, or owing to the presence of any impediment to their free performance, the depletion does not proceed *pari passu*, a collection of serous fluid in the internal cavities or interstices is fre-

quently produced. Such an impediment may operate in the case of the dropsy resulting from the sudden swallowing of a large draught of cold water, when in a state of profuse perspiration—the cutaneous vessels being suddenly constricted, and the check thus given to the discharge by the skin being succeeded by preternatural effusion from the internal exhalants; a paralysis perhaps of the absorbents also taking place, from the sudden application of the cold. A check to the perspiration itself, without the concurrence of the other cause just named, seems to occasion dropsy. Long exposure to cold and moisture has this effect; both perhaps on account of the debility occasioned in such circumstances, and of the increased watery character of the blood. Living long on a poor or insufficient diet may probably operate in both these ways. Large evacuations of the blood, large purulent secretion, both tend to induce debility and to deteriorate the vital fluid itself; for the red part of the blood, in the case of the loss of this, is not so easily replaced as the thin or serous part; and the elaboration of pus is a vital process, which detracts largely from the more important ingredients of the circulating mass. Hence the dropsy which occurs in the circumstances just mentioned may, with great propriety it would seem, be also referred to both the causes above described. The retention of an undue quantity of the thinner part of the blood, in consequence of interruption to the renal function, may very readily, if

the natural secretion be not restored, lead to hydro-pic effusion into some of the internal cavities.

It has been fancied, that a dropsy may occasionally be produced by some obstruction to the passage of the lymph through the lymphatics themselves, or the conglobate glands that occur in their course : But the anastomoses which are so frequent in the absorbent system, render it very unlikely that an obstruction, either in the lymphatics or in these glands, could have much effect in this way ; and it is at least certain, that dropsy so produced is very seldom to be met with.

A rupture of absorbents may undoubtedly produce dropsical accumulation, by allowing the escape of their contents ; and an occasional anasarca, or rather œdematous swelling, may thus be the consequence of some casual violence done to some of the lymphatic vessels, by the over-exertion of superincumbent muscles, or in some other similar way. Such a thing has occurred as a rupture of the thoracic duct.

But perhaps the most common, and certainly the most serious cause of dropsy, when it appears in an aggravated form, is organic visceral disease. By such disease an interruption to the free transmission of the venous blood to the heart, from the extreme vessels, is very often necessarily produced ; and the mode of action of such a cause of dropsy is easily explicable, by bestowing a little attention on the peculiar nature and connexion of the arterial and

venous apparatus. The blood passes from the extreme branches of the arteries into the veins ; but there are also a very great number of exhalant vessels distributed, as was formerly stated, to the interstices of the body, and the serous surfaces of the internal cavities. Now, if the freedom of the passage of the blood from arteries to veins be in any way interfered with, as may very readily be the case, by the pressure of a diseased or obstructed viscus upon the venous branches by which it is permeated, the current that is thrown upon the exhalants becomes much more considerable than in the healthy condition of the system, and the serum they throw out is preternaturally increased. Hence the phenomenon of dropsy from induration or scirrhus of the liver. There is no organic affection more frequently attendant on the disease than this, which, by obstructing the course of the blood which is collected from the intestines into the vena portarum, and circulates through the liver before its return to the heart, causes an over-exhalation into the peritoneal cavity, or, in other words, creates ascites. This is a form of the disease, to which the habitual addiction to excess in spirituous liquors, in consequence in great degree of the lesion of the liver occasioned by these, frequently gives rise ; such a morbid state of the liver co-operating with the debility of a constitution broken down by the repeated excitation and collapse which drunkards experience ; and such people are therefore, from either of these

causes, or from both conjoined, very certain of sooner or later becoming dropsical ; and indeed do generally die of this disease.

Disease of the lungs, whether this be organic, as in the case of pulmonary abscesses, &c. or spasmodic, as in that of asthma, is very often followed by dropsy ; in the production of which both debility and obstruction in these organs to the passage of the blood through them, are very likely concerned. When the blood from the right side of the heart does not pass through the lungs with sufficient ease, this must operate as an impediment to the return of that fluid from all the extremities of the venous system universally over the body ; and hence pulmonary disease is not only apt to induce effusion into the chest itself, but may very readily do so in other situations also : and disease of the valves of the heart, or perhaps of the heart itself, from the difficulty experienced in carrying on the circulating process at its source, very often occasions not only hydrothorax but ascites also, or, it may be, an universal dropsy. The anasarcaous extremities which occur in pregnancy are ascribable to venous obstruction—the increased size of the uterus impeding the free passage of the blood in the ascending cava ; and an ascites operates in the same way, and causes effusion in the inferior situations of the body, to a greater degree than the other accessories to the disease would alone effect. The œdema of the feet and legs which takes place in weak people at night, and disappears in the

morning, is referable to this cause of difficult venous circulation—the upright posture of the body, which had been persisted in in the day-time, occasioning that circulation to be carried on against the force of gravity, which, though it produces no such effect in the healthful tone of the vessels, is yet sufficient in the debilitated to occasion the occurrence in question.

Another cause of dropsy has lately been added to those formerly assigned, and which have been described above, namely, an over-tone of the vessels pouring out the hydropic fluid. That such over-tone may indirectly cause dropsy, in consequence of the debility which is the almost universal sequela of increased action in the living system, there can be no doubt; and dropsy is often certainly so produced. But that such preternatural activity of vessels is itself the immediate cause of the disease, was long not admitted into the creed of physicians on the subject. Such, however, it has latterly appeared, is sometimes the origination of dropsy: hence some talk of an active, tonic, or sthenic dropsy. Some call this form an arterial dropsy. All dropsies, with little exception, are in a certain sense arterial; that is, the exhalants rather than the absorbents are in fault. But the peculiar dropsy in question is arterial in a different acceptation of the term. It is however rare, comparatively to the other species, and demands a different treatment.

Having made these remarks on the nature and causes of dropsy in general, I shall now speak of *particular* dropsies ; and, first, of *Hydrothorax*. This is a collection of water within the chest. It may be in various situations ; and sometimes it is in several, or in all of them at once, sometimes it is only in one of them. The symptoms of it are in very various severity, and they are also of very great variety in their concurrence, rendering it often very difficult to detect the disease at all, or, when we have satisfied ourselves of its existence, to say with any certainty in what particular situation the hydropic effusion has taken place. The first indications of hydrothorax are frequently not very well marked, and they are commonly somewhat slow in their progress. There is an anxiety at the lower part of the sternum, with some irregularity and inconvenience in the respiratory function, and a short dry cough, which, however, is afterwards accompanied with mucous expectoration. As the malady advances these symptoms become more urgent, and are now accompanied by others, which very much increase the distress of the patient. His difficulty of breathing becomes very great, and it is particularly oppressive on his ascending an acclivity, or on making any uncommon exertion. His cough and dyspnoea are at length aggravated by so slight an effort as walking across a room. He is now very sensible of increased suffering when he assumes the horizontal posture ; so that he starts up suddenly out

of frightful dreams from his sleep, with palpitations of the heart, extreme anxiety, and a sense of suffocation ; and at these times he is apt to have convulsive efforts of the respiratory muscles, and is obliged to sit erect with his mouth open, in order to take in the air. His pulse is probably irregular and intermittent, his thirst is preternaturally great, and his urine deficient in quantity, high-coloured, and depositing much reddish sediment on standing. His lips are livid, and his whole countenance pale and swollen, and frequently pitting on pressure, especially in the morning. Sometimes there is a numbness or pain in his arms. The feet and legs are commonly œdematous.

Included under the general name of hydrothorax, may also be what is especially called hydrops pulmonum, or anasarca pulmonum. This is when the fluid is effused into the cellular substance of the lungs. It is said not to be of very common occurrence, unless as a part of effusion into the cellular substance of the body. This has the general symptoms which have been detailed, but something peculiar to itself along with them. In particular, the uneasiness of the patient is, in this case, not much affected by the position of the body, although his dyspnœa is much aggravated by any exertion ; and on attempting to take a *full* inspiration, he experiences, as it were, a physical impossibility in proceeding in the inhalation, and is compelled to desist. The cells of the lungs are compressed by the fluid

contained in their substance, and cannot be expanded so as to admit a sufficient supply of air. The horizontal posture does not much affect him, as has been hinted, because the fluid being in the situation just named, it cannot get out of the parts it occupies in any one attitude of the body more than another: Whereas, when the water is contained in the cavity of the chest, between the pleura pulmonalis and the pleura costalis, when the trunk of the body is erect it descends by its own weight, and presses down the diaphragm, which enlarges the space in which the lungs have to play; and this enlargement is farther assisted by the pressure of the abdominal viscera, in consequence of their gravity, being also taken off from the under surface of the diaphragm. The contrary of all which occurs when the person is recumbent.

The effusion, when it occupies the situation between the pleura pulmonalis and the pleura costalis, may be either on one side or on both. When on one side only, then the person lies more easily on the side on which the hydropic effusion exists.

Another situation in which the serous fluid may be is in the pericardium. This form of the disease it is in general very difficult to detect; for the symptoms of it are applicable to various other diseases. Anxiety, a sense of stricture across the breast, irregularity of the circulation, palpitations of the heart, tendency to syncope, breathing more easily when in a stooping posture of the trunk, and

a peculiar undulating motion occasioned by the heart's pulsations between the third and fifth ribs, are said to attend the hydrops pericardii, or hydrocardia, as it is called; but at best our opinion in regard to its presence must be, it seems, nothing more than conjecture.

The state of the disease in which the water is contained in some preternatural sac, or in small cysts or vesicles, commonly called hydatids, attached to the surface of the pleura, or floating as it were in the cavity of the thorax, is comparatively rare. Such a form of dropsy is principally observed in the cavity of the abdomen.

Dissection in hydrothorax shows a great variety of morbid states of the thoracic organs. The lungs are found to be affected with vomicæ, tubercles, condensation, or hepatization, and sometimes ossification, existing, as it is said, in the extreme ramifications of the bronchia; adhesions in different situations, affecting the heart, pericardium, lungs, are observed; ossification of the valves of the heart and great vessels, enlargement of the heart in various parts of its substance, and a variety of diseased structural appearances are met with—all tending in one way or other to create an impediment to the circulation of the blood, and so causing that preternatural effusion from the exhalant vessels which constitutes the disease. These appearances, on dissection, occur in greater or less number, sometimes very few of them being present, and sometimes

several. Sometimes there is no organic affection whatever.

Hydrothorax is sometimes unaccompanied by any other species of dropsy ; and sometimes it is part of a general hydropic diathesis, which manifests itself over the rest of the system also. Sometimes it precedes such general dropsy, but more commonly it follows it, and sometimes makes its appearance before effusion into any of the other cavities.

Hydrothorax may prove suddenly fatal ; but sometimes the patient may live long under it. Hæmoptysis is not an unfrequent symptom before death, from the stagnation of blood in the lungs, and its difficult transmission through them. At length delirium and coma occur, and death succeeds, from the pressure of blood on the brain ; or, the dyspnœa increasing more and more, the expansion of the lungs is altogether prevented, and the patient dies from suffocation.

The prognosis in hydrothorax must in general be very bad ; for, as we have seen, the disease is so often the result of organic lesions, which we know no means of removing, that, however we may attempt to carry off the water, the expectation of a cure can seldom be sanguine. If the effusion in the chest is idiopathic, depending for example on mere debility, and then most probably conjoined with general dropsy, the opinion will no doubt be much more favourable than when the hydrothorax is symptomatic of some morbid organic state of the

thoracic viscera. Contrary, however, to this estimate of the danger of hydrothorax, some have asserted, from comparative observation of the fatality of the different forms of dropsy, that this species is as often recovered from as any of the rest. The *causes* we cannot accurately know; and our judgment must be formed from a careful observation of the symptoms, the age and constitution of the patient, and the effect of the remedies employed. If these last succeed in ameliorating the disease, and the constitution is unbroken, and the patient rather young than otherwise, the prognosis will not be nearly so bad.

Hydrothorax is distinguished from Angina Pectoris, by the latter occurring in paroxysms, and these going off on the patient desisting from any exertion which is so apt to bring them on: during them there is also a peculiar feeling, as it were, of immediate annihilation on the part of the patient. The pain extending to the left arm, and tendency to syncope, will also assist in pointing out angina pectoris; and the constant dyspnœa which occurs in hydrothorax, is in that disease wanting. Asthma occurs in fits; and the peculiar sound in respiration seems also to distinguish it, as well as the absence of the general symptoms of hydrothorax. Aneurism is marked at length by the appearance of a pulsating tumour at the upper part of the breast. Palpitation wants the dyspnœa, &c. Empyema is preceded by inflammation, and has the usual marks of phthisis.

On the whole, the diagnosis is often very difficult ; and there may be a combination of disease, and a complication of symptoms, rendering it impossible to ascertain the true state of the case.

Percussion, which implies the placing the trunk of the body upright, and tapping on the chest with the fingers, is recommended by some, in order to ascertain the presence of water in the thorax. If the cavity between the pleura pulmonalis and the pleura costalis contains fluid, the sound emitted is, it is said, more dull than natural. Concussion, or the agitating or shaking of the person when placed in a chair, is said sometimes to cause a gurgling noise to be heard. But this may be produced by the liquid contents of the stomach ; and the practice is farther very much reprobated by some, on account of the sudden deaths which have occurred in hydrothorax on making any unusual exertion. It is said, that, by pressure on the abdomen, applied backward and upward, a sense of suffocation is produced. Auscultation is another method proposed for ascertaining the presence of hydropic effusion in the chest. But it is to be feared that none of these devices are of very great value, or much to be depended on.

Hydrothorax is more common in men than in women—in those whose capacity of chest is large—who are advanced in life—or who have been subject to asthmatic disease. It is one of the modes in which pneumonia or pleurisy may terminate.

Ascites.—This is the name given to a collection of fluid effused from the serous lining of the abdomen, or peritoneum, into the cavity formed by that membrane. This is the ordinary form of the disease—the water occupying the general abdominal cavity. But sometimes the dropsy is of a partial nature, the fluid being contained in sacs, or membranous bags or cysts, which are attached to or formed on some of the abdominal organs. These cysts occur most frequently in connexion with the ovaria, or with the liver, but they are also found in other situations. There seems to be something of a peculiar character in these encysted dropsies, or *hydropes saccati* as they have been denominated, separating them from the usual forms of hydropic disease: for neither are their symptoms, as respects the general constitution and functions, the same as occur in other cases of dropsy, nor are they to be removed by those curative means which frequently succeed in the treatment of *them*.

An ascites sometimes occurs very suddenly, as from the application of cold, but more commonly it is slow in its progress. The first appearance of it is an enlargement, or degree of swelling and distension, in the lower part of the belly or hypogastrium; which however, by degrees, becomes more considerable, and is also, as it advances in size, associated with affection of the general health, and derangement of several of the functions. Thirst, a usual symptom of dropsical disease, occurs here: the skin

is also dry and parched, and the urinary secretion diminished, while what is evacuated, though sometimes pale, is commonly high coloured, and lets fall a copious sediment. The stomach and bowels are affected; anorexia, and torpor of the intestinal function, with acidity and flatulence, occur. The respiration is impeded, in consequence of the preternatural distension of the abdomen, even though no effusion may as yet have taken place in the chest. There is something of cough. Emaciation is consequent upon the imperfect performance of digestion and assimilation; and, the disease going on increasing, death at length ensues from debility; from the respiratory process being prevented, in consequence of the extension of the disease to the thorax; or from affection of the cerebral functions, coma and apoplexy at length supervening; but the abdomen frequently attains an enormous bulk before the fatal termination of the complaint.

Abdominal dropsy, or that state of the disease in which the water is contained in the general cavity of the belly, is to be distinguished from the partial or encysted kind, by the urgency of the symptoms which attend the former as compared with those of the latter. The thirst is not so great, nor is the urinary secretion so much affected; and the patient frequently labours long under the disease in this encysted form, without either that diminution of appetite or loss of strength which attend the other species. Neither is that pale or sallow complexion

present, which characterizes the hydropic diathesis in general. Further, the disease when partial, the *hydrops saccatus*, is, at its commencement, confined to one particular part of the abdomen—there is a sense of weight, and a dull pain *here* ; but the effect which takes place in general abdominal dropsy, on the patient changing his position in bed, does not occur. When the effusion is *general* in the cavity, the sense of weight and distension is most felt on that side on which the person lies ; but, in the disease in question, the annoyance in these respects is confined very much to one particular situation. When, however, the *hydrops saccatus* has attained a very great size, it spreads over the general abdominal cavity, and it then becomes very difficult to distinguish it from the usual form of ascites. But, by attending to the character and combination of the symptoms in the manner above described, we may at least conjecture with great probability as to the nature of the disease. If the impression made by it is more of a local character, and if it is unaccompanied with any considerable degree of dropsical effusion elsewhere, the chance is, that it is a partial or encysted dropsy.

Ascites may be either idiopathic—that is, not dependent on any other disease—or it may be symptomatic. The first case is, when it is brought on by debility, exposure to cold, or occurs after exanthematous disorders, especially scarlatina, or as a sequela of fevers which have very much weakened the con-

stitution, although they may have occasioned no organic lesion of viscera. It is symptomatic of disease of the liver, pancreas, spleen, and, as it is said, mesenteric glands. Chronic hepatitis, scirrhusity, or induration, or tuberculous affection of the liver, is especially a source of abdominal dropsy. It may be connected with jaundice; it may be brought on by asthma; it is that form of dropsy to which drunkards are especially liable.

On dissection we find the abdomen containing a fluid of various appearance and character—sometimes thin and watery, at other times of considerable viscosity—sometimes pale, at other times of a red colour. Sometimes the fluid is found in cysts, constituting what are called hydatids. Generally the abdominal viscera are found variously diseased; sometimes one organ, and sometimes several being morbid: the liver is, however, the most frequent seat of organic derangement. Sometimes there is merely found a greater or less extent of inflammation of the peritoneum; and, occasionally, an abdominal dropsy, which has proved fatal, has been found on dissection to be complicated with thoracic disease, and without any morbid affection of the viscera of the abdomen whatever: and one is apt to be surprised, in such a case, at the hydropic effusion having taken place in the cavity of the belly rather than in the chest.

Tympanites is a disease which has, at first sight, some resemblance to dropsy, as far as the enlarge-

ment of the belly is concerned : but the swelling is elastic in tympanites, and remains the same in shape in whatever situation the patient be ; in ascites, the elasticity is wanting ; and, by causing the patient to draw up his extremities, and then tapping on the abdomen on one side, while the fingers of the other hand are applied on the opposite one, we can frequently perceive the fluctuation within, or perhaps hear it also. This proceeding, however, may sometimes be partly frustrated in consequence of internal adhesions, and probably there may also be some tympanitic distension combined with dropsy. Tympanites is relieved by expulsion of flatulence. The thirst and deficiency of urine seem to point out ascites : the breathing is, in tympanites, equally affected in all postures of the body. Physconia, or morbid enlargement of some organ, is to be distinguished by the slow growth of the disease, and its being confined to one part of the abdomen. Ascites commences at the lower part. From gravidity ascites is distinguished by the suppression of the menstrual discharge, by the swelling of the mammæ, and the train of peculiar symptoms which the female constitution is subject to at the time in question ; but still there is occasionally some difficulty here in forming an accurate opinion on the subject.

The prognosis will depend upon the constitution, age, symptoms, duration of the disease, its origin, and tractability or resistance to medical treatment. If there be no organic affection, little or no fever,

no great thirst—if the hydropic swelling is diminished in consequence of the practice employed—if the person is young, and not debilitated by former disease or debauchery—if there is no great oppression of breathing—if the disease has not lasted long; we may entertain a very favourable anticipation of a cure. If the contrary of these circumstances occur, and according to the degree in which the reverse of them occurs, so will the danger of the patient be increased. Ascites, however, has in some cases lasted a long time; and occasionally a person has laboured under it for a protracted period, without any such injury to the general health as one might be apt to suppose.

I mentioned the division of the disease into idiopathic and symptomatic. Another division has been made, which, till comparatively lately, would not readily have been admitted or thought of, namely, into sthenic and asthenic. There seems to be no doubt entertained now that it is sometimes of a truly sthenic character, occurring in those of a florid complexion, and by no means of the leucophlegmatic habit of body. In these cases, it is said, that the pulse, and the blood drawn, both indicate the state of the system to be such as alluded to. The former is perhaps full and hard, and the blood is buffy, and has the usual characters it assumes in phlegmaseous diseases. It is said that the body does not pit, in this condition of the complaint, so much as in the leucophlegmatic dropsies, if I may so speak. And,

finally, it is of much importance to attend to the distinction in question, with a view to the regulation of our practical treatment of the disease ; for the sthenic form of it is to be relieved by blood-letting and other evacuations, while stimulant means without these are hurtful. The asthenic dropsy is, however, much more common.

Anasarca.—Here the water is diffused throughout the general cellular tissue of the body. The causes which lead to this form of the disease are very much the same as those which produce the others—they have already been sufficiently discussed. Cullen has distributed anasarca into different species, according as it arises from one or other of these different causes : but it will often be difficult for the physician to know to which species to refer the disease he has to treat, and not unfrequently several of the species may be conjoined. He sets down, “ *Anasarca serosa a retento sero ob evacuationes solitas suppressas, vel ab aucto sero ob ingestam aquam nimiam ; Anasarca oppilata a compressione venarum ; Anasarca exanthematicum post exanthemata, et præcipue post erysipelas suborta ; Anasarca anæmia a tenuitate sanguinis per hæmorrhagiam producta ; Anasarca debiliū in debilibus a morbis longis, vel ab aliis causis.*” And we have, no doubt, a very good view of the nature of the disease, in this enumeration of its varieties.

The first appearance of it is in a swelling of the feet and legs, especially at night, which at first disappears, or is less considerable, in the morning. By degrees however it increases, and, proceeding upwards, affects the thighs, and afterwards the trunk of the body, and even the head, so that the face, at length, becomes puffed up and bloated. The breathing becomes affected, and there is a cough and thin expectoration—the cellular membrane of the lungs probably participating in the effusion. Deficiency of urine, this being also more intense in colour than natural, and giving a reddish deposit on standing, (though there is considerable variety in these respects, the colour being sometimes light, and the quantity secreted not so inconsiderable); anorexia, thirst, dry, or harsh, sometimes scaly state of the skin, slowness of the intestinal function, sallowness of the countenance, emaciation, torpor, and something of a febrile state, are the other marks of the disease.

The perspiration is no doubt deranged; but the diminution in its quantity, or the morbid change on its chemical constitution, has not been well ascertained.

The distinctive character of anasarca swellings is, that they are soft, inelastic, and pit on pressure.

Anasarca may be unattended with any of the other species of dropsy; but it is frequently associated with other dropsical affections. The mode of commencement, and progress of an universal dropsy,

may be various. Sydenham gives an account of a general hydropic state, beginning in the lower extremities, and proceeding upward, which is at once comprehensive and concise. The following is an abridgment of it. After observing that swelled extremities are not always to be considered as showing the approach of dropsy, he says, “ Quo non obstante, si generaliter loquamur, suræ et tibiæ intumescences pro signo supervenientis hydropis habendæ sunt; maxime, si ita affecti spiritum ægrius ducant; qui quidem tumor tam copia quam mole auctior indies redditur, donec pedibus majorem aquarum vim respuentibus, crura tentantur, ac postea abdomen ipsum; quod quidem sero è sanguine jugiter decidente repletum, paulatim ad ultimum capacitatis suæ limen distenditur; adeo ut sæpe multos aquæ congios intus contineat.

“ Tria interim hunc morbum stipant symptomata, dyspnœa, urinæ paucitas, et sitis intensa.

“ Pro rata, qua æger in partibus, quas morbus obsidet, mole augetur, in reliquis magis magisque indies emaciatur, et gracilescit: tandemque cum tanta aquarum vis intra abdominis ambitum coerceri ulterius nequeat, impetu in viscera nobiliora et vitalem arcem facto, cataclysmo quasi submersus perit.”

It may be thought that I should have dwelt more upon the state of the urine in dropsies, and also upon that of the effused fluid; because of late some writers have thought that from these they could

draw some inferences of much consequence in determining the nature of the disease. The urine is often in a great degree coagulable by heat or acids: some contend that this is a sign of inflammation or of increased action; and that, along with this, the inflammatory coat of the blood drawn is frequently observed. In farther support of this theory it is said, that the fluid in the hydropic cavities shows flocculi of coagulable lymph in many instances, and is of considerable thickness; that the surface of the membranes lining these cavities is often covered with coagulable lymph; and, finally, that while it is insisted that the disease arises from tenuity of the blood, and laxity of the exhalants, the urine, which, in the healthy state, has little or nothing of such a character, is often now in a manner loaded with albumen—leading us apparently to a diametrically opposite conclusion. These and other observations have been made, pretending to establish certain novel theoretical doctrines in regard to dropsy; but, while they are not undeserving of attention, it is to be apprehended that they are by no means so satisfactory as some have imagined. The appearances on which they depend are by no means constant—on the other hand, very variable; and, in as far at least as our knowledge has hitherto gone, it is in the highest degree doubtful if we can in this manner acquire any important assistance, to speak generally, either as regards the prognosis or cure.

Cure.—The curative indications in dropsy will be sufficiently evident to any one who has properly attended to the nature and causes of the disease. They are principally three:—The first object at which we are to aim, is of course to remove the effused fluid; the second is to remove as far as possible the causes which have led to its accumulation; and the third is to employ such means as are calculated to restore the strength of the system, and prevent the re-collection of serum; to which may be added an occasional indication, which must sometimes also be kept in view, namely, the alleviation of symptoms.

The methods by which we endeavour to effect the dissipation of hydropic effusion are two, namely, the indirect, and the direct method. The indirect mode consists in the use of such medicines as possess a power of increasing the secretions or excretions, and thus bring on an increased activity of the absorbent vessels; by which means the hydropic accumulation is taken up, and, being carried into the circulating mass of fluids, is eliminated from the body in one of the several ways of emesis, catharsis, diuresis, or diaphoresis. In other words, we attempt to fulfil the first named indication, by the exhibition of emetics, cathartics, diuretics, or diaphoretics, or rather sudorifics.

Emetics.—There is often a very large quantity of fluid thrown out by vomiting; evidently much more

than the stomach could contain at the time of exhibiting the emetic. A spontaneous vomiting occurring in dropsical disease has been observed to cause a speedy diminution of the hydropic swellings; and the same effect has often been noticed from the use of emetic medicines. It would seem that the absorbents are called into action, and the effused fluid very rapidly taken up, partly in consequence of the increased secretion which the action of an emetic occasions, and partly from the concussion and agitation of the viscera during the efforts in evacuating the stomach. “Præter quam enim quod cessante vomitione,” says Sydenham, “in catharsin *τηνικατω* solet disinere, necesse est omnino, ut cum tanta fuerit agitatio concussio que tam ventriculi quam viscerum, à tam insigni aquarum corrivatione quasi circumseptorum, earundem evacuatio per ductus communi naturæ lege haud satis patentes, conatum ita vehementem insequatur.” It is obvious, however, that while thus much is undeniable with regard to the use of emetics in dropsy, very much circumspection and attention to a variety of circumstances respecting the patient and his disease must be exercised before we can judiciously resort to such remedies. In the first place, dropsy is a disease so very frequently connected with debility, that every thing calculated to increase this must be of very ambiguous propriety; and the weakening effect of vomiting will certainly, if it be not rapidly followed by counterbalancing advantages in the im-

pression made on the hydropic effusion, tend very remarkably to augment the diathesis which has brought on, or keeps up the complaint. Should vomiting, therefore, not soon show its beneficial results, it ought to be at once abandoned, and other means had recourse to. It will be inadmissible in hydrothorax—a state of dropsy in which the patient might run the risk of complete suffocation, if incautiously treated in this way. Neither is it to be thought of when there is any remarkable determination to particular organs, whether the head, lungs, or some of the abdominal viscera. Great dyspnoea and tendency to apoplexy especially contra-indicate it. But if the patient's strength is not as yet very much exhausted, and there are no urgent topical complaints, such as have been alluded to, vomiting may be tried with good hope of advantage. Emetic tartar, ipecacuan, and sulphate of zinc, seem to be the articles which will best answer as emetics—the more violent preparations of this class being properly discarded. The dose should probably be large, in order to procure a full evacuation; and if the practice succeed, the repetition should be as frequent as the circumstances of the case will admit. On the whole, though emetics are perhaps calculated to remove certain causes which may be accessory to the production of the disease, such as obstructions of some of the viscera, they are generally merely palliative remedies. They are sometimes useful as assistant to other means; for diu-

retics will frequently take much better effect after vomiting, or the renal secretion be greatly increased, even without the exhibition of any diuretic whatever.

Cathartics have been used in dropsy both in ancient and modern times; and they are often very effectual, notwithstanding that some writers are not very favourable to their employment, in occasioning a rapid absorption of effused serum. Sydenham had a high opinion of them; and experience has shewn, that the advantages they possess are in many cases very great. They are fitted to remove some causes of the disease, as partial congestions of blood, or determinations to particular viscera, or to obviate general plethora, if the disease is connected with that, as it may be if it have originated from suppressed discharges. They may be used in all forms of dropsy, but are chiefly indicated in ascites, in which, as they occasion a drain from branches of the same arteries which pour out the hydropic fluid, and probably also by their more immediately stimulating the absorbents which open on the cavities which contain it, they may cause a very great and speedy decrease of the disease. They have the advantage over emetics of being less harsh in their operation; for repeated vomiting, even in circumstances favourable to its employment, is what very few patients would choose to undergo. But the same objection lies against them as against emetics,

in cases of great debility or exhaustion. They are not well suited, therefore, to dropsy depending on general relaxation ; and diseases of the heart, ossifications, &c. are beyond their reach. They should not be persisted in, if their good effects do not soon appear ; for the hydropic diathesis, and consequent effusion of serum, would, in all probability, be increased. They may, however, be longer tried than emetics ; and, with proper precaution and attention to circumstances, they are highly important in the treatment of the disease. During the intervals, both of their exhibition and that of emetics, a tonic diet and regimen, and other corroborant means, as far as the case will admit, ought to be had recourse to. Cinchona and wine may therefore be proper. Formerly it was customary to use the most drastic purgatives in dropsy, such as scammony, colocynth, gamboge, elaterium, &c. But though an occasional use of these is still not abandoned, yet the business is usually found to be better managed by milder means. The supertartrate of potass has of late been found of much service in dropsy ; and it has been said, whether correctly or not, that it even seems to possess, as it were, some specific anti-hydropic powers, independent of its action as a purgative and diuretic,—the disease being often much ameliorated, as some have affirmed, under its exhibition, even independently of its effect on the intestines or kidneys, which has been explained on the supposition of its proving deobstruent. This may

be mere theory ; but at all events it has been found very effectual in many cases as a cathartic and diuretic. It may be given in the dose of half an ounce dissolved in water, and the quantity afterwards increased. Cathartics, when applicable in the treatment of dropsy, should be repeated frequently, in order to keep up the discharge from the exhalants of the intestines—perhaps twice a-day, or every second or third day, according as the strength and other circumstances of the patient admit. “ *Ad hæc in cathartici omnibus hydropicorum sanationi dicatis,*” says Sydenham ; “ *id diligenter est observandum, ut aquæ ea maxima celeritate exhauriantur, quam ægri vires ferre queant ; utpote qui singulis diebus expurgari debeat : nisi quod sive ob nimiam debilitatem corporis, sive propter cathartici præcedentis operationem plus satis violentam, dies unus aut alter nonnunquam intercalari possit. Etenim si non nisi post longa intervalla repetatur purgatio, quantum libet copiosa catharsis præcesserit, aquis denuo affatim colligendis ansam præbebimus ; atque ex hac induciarum occasione, quasi victoria jam parta uti nescientes, tandem loco pulsi, re infecta turpiter fugabimur.*” The supertartrate of potass is most successful in anasarca, less so in ascites, and least in hydrothorax. Gamboge, triturated so as to form a very fine powder with supertartrate of potass, acts mildly and yet fully on the intestinal canal : the dose of it may be two or three grains, perhaps twice a-day. Gamboge, joined with submuriate of

mercury, in the proportion of three grains of each, and made into a powder with supertartrate of potass, is a very excellent formula, and often abstracts the hydropic effusion very rapidly.

Diuretics.—The re-excitement of the kidneys, which are generally more or less inactive in dropsy, seems a most natural means of treating the disease. This is however often only to be accomplished with great difficulty ; and the medicines which have the power of increasing the renal secretion are of very great uncertainty of action ; and sometimes one of the class will succeed when another has failed : nor is it easy, if at all possible, in many instances, to account for this irregularity in their effects. Diuretics have not the power of removing such organic affections as are too often the source of dropsical effusion, and, therefore, are too commonly merely palliative remedies : but, in certain cases, they may effectually cure the disease ; and, at all events, they are very valuable adjuvants to other curative agents. They furnish certainly the most agreeable plan of treatment ; and, though they require a longer time to evacuate the serum than cathartics, there are fewer objections in general to their use. But the complaint of Mead in regard to them is still applicable : “*Incertæ autem virtutis sunt, in hisci casibus, medicamenta quæcunque, etiam illa, quæ præstantissima censentur diuretica ; quæ in hoc enim respon-*

dent, in illo spem fallunt ; aliud igitur atque aliud tentandum est.”

The *Scilla Maritima*, or squill, is an article of remarkable power as a diuretic, although of the same uncertainty of action as other medicines of the kind. It is much employed in the treatment of dropsy, and often found very efficacious. It is useful in all forms of the disease, but is particularly adapted to hydrothorax, possessing apparently some specific influence over the vessels of the lungs ; and hence it is well known as an expectorant. The cause of its frequent failure in dropsy may be owing to various circumstances. If the drying of it be not managed with proper precaution, it loses greatly in power : it may also be injured by keeping ; and the state of the system may not have been adapted to its employment. It is probably unsuitable to those cases where there is phlogistic tendency, more especially of the pulmonary system, and where venesection or other evacuants are indicated, and should therefore be premised before it is administered. It may also fail from a want of attention to those adjuncts which assist its effects.

Squill acts powerfully on the stomach, occasioning nausea and vomiting, with great slowness of pulse ; and it has been given as an emetic in dropsy. It is then given in large doses ; but the most approved employment of it is as a diuretic. The doses should be small, and gradually increased, and some aroma-

tic conjoined, in order to prevent its action on the stomach. Cinnamon, ginger, &c. may be added ; opium occasionally : but the most important combination of squill is that with mercury. The mass of the mercurial pill may be united with that of the squill pill, in the proportion of one part of the former to two of the latter, and given in the dose of five grains twice or thrice a-day. But it is still better to give the mercurial by itself till the system is somewhat affected by it, and then to follow this up by small exhibitions of squill. Mercury is a very universal agent in the treatment of disease : it excites all the secretions, and may be made to act on any of these, according to the concomitant circumstances of its employment. By keeping the surface warm, and other precautions, it is directed to the skin ; but if the patient be kept cool, and some other diuretic used along with it, it will very certainly promote the discharge by the kidneys. It is very effectual in various forms of dropsy, and particularly serviceable in that dropsy which is connected with a morbid condition of the liver. Hence mercury is a very valuable adjuvant to the squill in the treatment of this disease, its exhibition being managed in some of the modes just mentioned.

Digitalis is a medicine which has acquired great celebrity in the treatment of dropsy. The observations of physicians, however, in regard to the best mode of its exhibition, and the effects which it pro-

duces, are somewhat discrepant. It acts powerfully on the nervous system and the circulation : it produces dreadful nausea and vomiting, and very remarkable slowness of pulse, followed by torpor, and a comatose state. When these symptoms appear, the most powerful stimulants are required to avert the fatal termination. Such are the effects of digitalis when taken in too great quantity ; and they undoubtedly forcibly suggest the propriety, and even necessity, of the very greatest caution in its administration.

These violent effects may, however, be avoided, and the salutary powers of the medicine procured, by a proper attention to the circumstances of its exhibition. By beginning with small doses, and gradually increasing these, it will act on the urinary secretion previously to its producing any remarkable effect on the stomach or circulation. The dose may be at first half a grain, or a grain, of the powder, which may be increased by an eighth or a fourth of a grain every other day, or by one-half after three or four days, but should never exceed two grains : or probably it is better to dispense with the gradual augmentation usually recommended, and continue at the same small exhibition till the diuretic effect appear. This, the powder of the leaves, is perhaps the best form of giving the digitalis. The tincture is next to this, and has one advantage over the other, that it is not liable to spoil by keeping. The infusion and decoction, which are also forms of prepa-

ration, are said to be much more liable to occasion nausea, and the other bad consequences which have been mentioned, than either the tincture or the powder, and should therefore rather be avoided. Some however affirm, that the infusion is the best form in dropsy, and that, when given in substance, the action of the *digitalis* is more apt to accumulate in the system, and its violent effects to be induced, although for some time they may not appear. The powder is commonly given in a pill, and some aromatic or stimulant should be joined, in order to prevent its effect on the stomach. The tincture should also have some similar addition; and the *spiritus ætheris nitrosi* is a good one, both assisting the diuretic power of the *digitalis*, and obviating its tendency to induce nausea. The *spiritus juniperi compositus* will answer the same purpose. Mercury may be advantageously joined with *digitalis*, especially with a view to its effect on visceral obstruction.

Digitalis is a very valuable diuretic in hydrothorax, but also very useful in other dropsies. Some say that it succeeds best when the patient is of lax fibre, and weak leucophlegmatic habit. This is allowed by others to be the case in respect to ascites and anasarca, while it is affirmed that in hydrothorax a different constitution is well adapted to it. On the supposition of its proving most useful in those patients in whom there are well-marked symptoms of debility, such as weak intermittent pulse, pale countenance, and much diminution of muscular

power, it has been proposed by some to exhibit medicines calculated to bring the patient's habit into something of this condition before using the digitalis, such as supertartrate of potash or squill. But the correctness of this view of the matter has not been satisfactorily established ; and if it be correct, it is at least a very anomalous circumstance, that a medicine, whose depressing power is so great, should answer best in those whose complaint is probably in great measure ascribable to that very state which the remedy in question appears so well fitted to augment.

However this may be, it is still more important to attend to the proper management necessary in its administration. The duration of its exhibition must depend on the effects it produces, and the peculiar idiosyncrasy in respect to these observable in each particular case. The repetition should not be more frequent than twice a-day, otherwise those effects on the stomach, the circulation, and nervous system, which have been mentioned, may occur. Should any of these manifest themselves, the medicine is immediately to be left off, and strong stimulants—alcohol in some of its forms, as rum or brandy, ammonia, opium, aromatics, æther—are to be had recourse to, according as the case may require. It is a peculiarity with respect to digitalis, that its effects on the constitution are said to become greater by use ; whereas the common observation in regard to substances affecting the nervous system is, that they

lose part of their powers on the living body by repetition. Hence it has been observed, that, after desisting from the exhibition of the digitalis, and again employing it, the same effect may be produced by a smaller quantity than before; so that ten drops of the tincture will now perhaps go as far in its influence as twenty did formerly. The effect on the pulse, &c. also sometimes continues for a number of days after the use of the medicine. Hence, from all that has been said, we see the necessity of very great circumspection in the use of digitalis. If it does not, after a reasonable time, increase the renal secretion, we ought to exchange it for some other article; and, at all events, whenever it shows itself on the system, it ought to be immediately left off.

The *modus operandi* of digitalis is, in great measure, matter of conjecture. It evidently acts powerfully on the nervous system; but whether primarily as a stimulant or sedative, it is very difficult to determine. If its first action be stimulant, it is evidently transient, and rapidly succeeded by its narcotic influence. Again, why its narcotic should be joined with a diuretic power, is equally obscure. May it not, in certain cases of its success in dropsy, act by counteracting some phlogistic disposition in the vessels of the serous membranes which supply the hydropic effusion? It may also stimulate the absorbents. This seems to be evinced by the circumstance of its only increasing, as it is said, the

urinary discharge when dropsical effusion is present; and *perhaps* it may possess some direct specific power over the renal secretory vessels. At all events, the digitalis purpurea, or fox-glove, is a very valuable remedy in dropsical diseases; so much so, that one physician (Withering), who paid minute attention to its antihydropic powers, affirms, in other words, that, if the patient can be cured by the abduction of the effused fluid, the digitalis will effect a cure.

There are a variety of other articles, which, though of minor importance on the whole, when compared to those which have been described, are yet of frequent advantage as diuretics in dropsy. Such are certain saline substances. The supertartrate of potass has already been mentioned as a cathartic; but it may also be used with a view to its diuretic effect: in which way, indeed, it generally also acts along with its action on the intestines. These should be kept open, but not too lax; and therefore the dose ought to be diminished and repeated according to circumstances. The nitrate of potass is seldom given alone; but sometimes it may be joined (as may the supertartrate) with squill—five grains of nitre, and two or three of dried squill being given twice a-day. The acetate of potass is purgative, in the dose of three drachms or half an ounce; in that of from ten grains to half a drachm, it is diuretic. The carbonates of potass and soda are also diuretic, in the dose of from ten grains to half a drachm. The

carbonate and acetate of ammonia are rather apt to excite the skin than the kidneys. The *nicotiana tabacum* in different forms has been used ; but there is risk of nausea and vomiting, and strongly sedative effects, and it is therefore scarcely, if at all, to be employed. The *baccæ juniperi communis*, or berries of the common juniper, have been used in dropsy, and have sometimes effectually increased the urinary discharge—half a drachm triturated with sugar being given several times in the day. We may conjoin the supertartrate of potass or nitre. The most common form, however, is an infusion made with two or three ounces of the berries bruised, and a pint of boiling water. The essential or volatile oil, in the quantity of a few drops diffused in some proper vehicle, alone, or joined with other diuretics, is a good remedy ; it is well adapted to be added to *digitalis* in making it into a pill. The *spiritus juniperi compositus* is very advantageously combined in formulæ containing tincture of squill or *digitalis*, aiding their action on the kidneys, and obviating their tendency to affect the stomach. The distilled spirit Hollands, or that commonly called gin, is frequently useful in a diluted state in dropsy, and depends on the essential oil of juniper for its diuretic powers. The tincture of cantharides, when there is great debility and torpor, has been considered occasionally of use in dropsy ; but there is a risk of its merely occasioning irritation, especially of the urinary passages, without materially increasing the

renal discharge. The *oleum terebinthinæ* often acts powerfully as a diuretic in the dose of a few drops; but is inadmissible where there is any phlogistic tendency. The *spiritus ætheris nitrosi* has already been alluded to, and is an excellent assistant to other diuretic remedies; or, mixed in small proportion with water, it makes an agreeable drink for dropsical patients.

A few other articles, such as an infusion of mustard seed, an infusion of horse-radish (*infusum armoraciæ*), a decoction of the tops of the *spartium scoparium*, or broom, &c. are diuretic, but not often used.

There has been a dispute in regard to the propriety or impropriety of using diluents in dropsy. Some have said that they tend to increase the disease; and that they have even been the means of bringing it on. Others again assert, that such has never been the case unless on account of very particular circumstances—such as much predisposition, or the concurrence of other causes of dropsy; that the urgent thirst demands indulgence in drink, nature herself thus pointing out its necessity; that one principal class of remedies employed in the cure are frequently of little avail without an ample supply of liquid; that abstinence from liquids induces torpor of the kidneys, and thus, as it were, assists the disease. It would seem that the truth leans most to the side of those who are favourable to the use of diluents in dropsy, although much must depend

upon the particular circumstances of the case. Diuretics, as has been hinted, seem to require a quantity of water to enable them to act. The supertartrate of potass has been observed to be sometimes nearly inert, unless conjoined largely with fluid. If given without this, it may not find a sufficiency in the stomach to turn it into a proper state of solution. Perhaps the vegetable diuretics do not stand so much in need of this assistance. Could we ascertain an instance in which the disease has primarily arisen from deficiency of action in the absorbents, perhaps this might be an advisable case for withholding drink ; but, as must be apparent from the investigation of the causes of dropsy, this occurrence is certainly rare—this being far more frequently, properly speaking, a disease of the sanguiferous than of the lymphatic system. But at all times we will be greatly directed in the right adjustment of the matter, by attending to the condition of the disease under the use of liquids, and of the other curative means. If, on comparing the liquid ingesta with the liquid egesta, we find that the discharge by the kidneys exceeds, or even equals, the quantity of fluid taken in, the allowance of diluents is not hurtful ; on the other hand, it is productive of benefit. The hydropic swellings, too, should be measured from time to time, so as to ascertain if they are diminished, and to what extent, by the practice employed. On the whole, liquids in general seem not to be injurious—for the evacua-

tion from the system, by the different excretories, especially the skin and kidneys, is, in most cases, augmented in proportion to the quantity of drink. Water is itself a powerful diuretic, and cases are even recorded in which it has cured the disease.*

Sudorifics.—The plan of sweating is not much recommended in dropsy. The vessels of the skin are often, to all appearance, very inactive; and most physicians are of opinion that they are only with difficulty to be restored to their function, until a tendency to returning health has been effected in the constitution by other means. Sudorifics are, therefore, not much employed in dropsy. They have, however, sometimes succeeded in curing it; and perhaps they may be eligible remedies where the complaint has evidently arisen from a check to perspiration. Some physicians have not been at all

* Dropsy, it is said, has been cured by totally abstaining from drink; but perhaps the *precise* rationale of such cure is not to be found in that abstinence. “Non erit nunc a proposito alienum ab assumptione eorum, quæ juvare possunt, ad abstinentiam transire; eam dico, qua quis ab omni potu per longum tempus se cohibet: hanc enim pro remedio etiam medici commendant. At difficillima sane est ista medicina, cum sitis plerumque vehementer premit; quæ nisi sedetur, eam molestiam affert, ut vita non tanti videatur, ut homo illam tali cruciatu redimere velit. Novi tamen duos, qui, gravissimo hydrope ascite laborantes, longa istiusmodi patientia sibi ex toto temperando ad salutem perducti sunt. Illi autem bibendi cupiditatem os et fauces succo pomorum acidorum aut limoniorum eluendo, devorato subinde hujus aut illius aliquantillo, pertinaciter fallebant.”—*Mead*.

averse to this plan of treatment. Certainly the state of the skin in many instances seems to indicate such remedies ; and if we can procure a free evacuation by the surface, we generally alleviate the thirst and febrile irritation, and increase the flow of urine, even if we should not advance greatly in effecting a cure. It is said, however, that sudorifics, when they take proper effect, frequently diminish the hydropic swellings very rapidly. At all events, they do not prevent the use of other means, and may be good adjuvants to other practice. When they are resorted to, the sweating should be kept up for a considerable time, and, along with the sudorific medicines employed, the warm bath, diluents, and other parts of the regimen ad sudorem, should be brought in aid of their operation. The pulvis ipecacuanhæ c̄ opio may be well adapted to such cases ; and certain stimulant and cordial diaphoretics, as the carbonate and acetate of ammonia, camphor, &c. would appear to be suitable, on account of the debility which so often prevails.

Thus far attention has been directed to the medicines, by means of which we may probably be able to remove the dropsical accumulation in the indirect manner—that is, by exciting the different secretions or excretions. The other mode of getting rid of the effused water in dropsical diseases, is by the direct mechanical procedure of making an opening into the hydropic cavity. In ascites this is often done, if not with the result of curing the disease,

which is seldom the case, at least with that of procuring much alleviation of it, and temporary advantage. The question is, whether this resource ought to be adopted at an early period, or delayed till other means have been proved to be ineffectual. Some recommend the *paracentesis*, as it is called, to be early resorted to, on the ground that, if it is so, there may be a chance of a permanent recovery in consequence. Others say it should not be thought of till circumstances render it in a manner absolutely necessary. It is in general only a palliative remedy, for it does not touch the cause of the disease, and therefore the effusion commonly after a time returns. There are a few cases in which the relief may however be lasting; as when there is no organic affection, when the water has been poured out suddenly, and when there is no remarkable hydropic predisposition. Where the prospect of tapping being curative is entertained, there will be better hope of this the sooner it is used; but it may at all times be palliative, and some have lived for a very long period under the disease, by having recourse to periodical evacuations of the hydropic effusion in this way. After the water has been drawn off, the application of bandages to the abdomen is requisite, because the blood, on account of the removal of the pressure which had previously existed, returns with less celerity to the heart, and a tendency to syncope occurs. The state of disease which renders the paracentesis of the abdomen urgently necessary, is when the thoracic and

abdominal viscera are very greatly impeded in their functions by the accumulation ; so that there is a threatening of suffocation from the pressure on the diaphragm, or of rupture of the parietes of the belly from the extreme tension to which they are subjected, in addition to all the derangement of the digestive and intestinal process.

Besides the immediate benefit sometimes received from tapping the abdomen, it has been noticed, that it is occasionally of great service in promoting the successful action of internal remedies. Diuretics oft answer much better afterwards ; and sometimes, after the removal of the dropsical effusion by paracentesis, the kidneys, the performance of whose office had been prevented by its pressure, will of themselves take on an unusual action, and a large quantity of urine be so discharged.

To the paracentesis of the thorax there are many cogent objections, as must be evident to any one who considers what was said in regard to the nature of dropsical effusion into the chest—the obscurity, in many cases, as to the disease, and the difficulty or impossibility often of ascertaining its seat, or of knowing the condition of the thoracic viscera. When it has been employed, it has generally proved fatal, and has therefore, latterly, been seldom or never had recourse to : and, after all, it could not be looked upon in any other light than merely as a palliative, the cause being unaffected by it, and,

therefore, the hydrothorax almost to a certainty recurring.

Punctures, issues, blisters, are sometimes effectual in diminishing the hydropic effusion in the cellular membrane ; but they have been much condemned on account of the risk of gangrene. Sydenham reprobates them in forcible terms. The risk is greater in parts farthest removed from the heart.*

* Verum et alia sunt à nonnullis remediorum loco præscripta, quæ ita non prosunt, ut etiam obsint plurimum : Hujusmodi sunt, &c. Vesicatoria item cruribus et tibiis superimposita, ubi cutis in magnam molem fuerit protensa, ad aquas scil. hoc pacto educendas. Vesicatoria autem locis prædictis ab empiricis applicari solita, calorem naturalem jam ferme aquis obrutum, deficientibus item spiritibus animalibus, omnino extinguunt, et gangrænam (plus satis in hoc casu familiarem) sæpenumero invitant. Et enim vulnus vel levissimum in hydropicorum carnibus, maxime in membro pendente, sanatu difficillimum est : quoniam ipsa carniū substantia his in partibus usque adeo irrigua est et scatens latice, ut data quacunque porta, continuo cursu prorumpat humor, à quo vulneris conglutinatio impeditur.—*Sydenham*.

The following is an account of an apparently spontaneous removal (certainly rare) of an abdominal dropsy, after the usual remedies had failed : “ Mercatorem quendam ascite gravatum, uno cum alio medico experientissimo, curabam. Tentatis incassum usitatis remediis, ad paracentesin, tanquam ad sacram anchoram, confugimus. Emissæ itaque sunt humoris limpidi et tenuis libræ circiter viginti. Post aliquot hebdomadas de novo intumuit venter. Convenimus ideo mane chirurgum abdomen denuo exinanituri. Subridens autem æger nulla se jam amplius egere curatione dixit ; et nudato corpore, abdomen molle laxumque ostendit. Mirantibus et rogantibus, numquid ea nocte per quascunque vias effusum fuisset, respondit, neque per alvum, neque per renes, neque per sudorem sibi plus solito profluxisse.

The *second* curative indication in dropsy is to remove the causes of the disease. If it has occurred in a person in whom the hydropic diathesis is well marked, and is ascribable to a leucophlegmatic disposition in the habit, which some peculiar exciting circumstances may have called into action, we are to endeavour to combat this by every corroborant means in our power. Tonic and stimulant medicines, with a correspondent diet and regimen, are to be prescribed. Cinchona, chalybeates, bitters, aromatics, as tending to promote the digestive powers, and as contributing to give general strength to the system, are therefore proper : The diet should be light and nutritious, and should partly consist of animal food : wine will be advantageous in the circumstances supposed ; and Rhenish wine, as having a diuretic property, is frequently preferred. Gin is diuretic, and may, in those cases of dropsy which admit of the stronger stimulants, be advantageously allowed in the form of gin punch. Exercise is calculated to benefit the constitution in general, promoting the digestive powers, and expediting the circulation in the veins ; thus obviating that languor in these vessels, which, acting as a sort of plethora,

Per glandulas itaque, et exiles meatus, in peritonæo, et membranis vicinis, absorptus fuit totus ille humor. Ipse autem postea medici cujusdam empirici curæ nimis imprudenter se commisit ; et ad præcavendum morbum valentissimis catharticis usus, brevi post, exhaustis viribus, consumptus est. Vix ulla tamen humoris copia in aperto cadavere deprehensa."—*Mead.*

renders the transmission of the blood into them from the extreme arteries of less easy accomplishment, and thus occasions it to be turned in greater quantity upon the exhalants of the hydropic cavities. Exercise promotes the urinary secretion : riding particularly assists this. Friction is useful ; and, in ascites, when persisted in, it is said to have had a considerable diuretic effect, the application of it being over the surface of the abdomen. The tonic medicines which have been alluded to, when debility is principally concerned in the disease, should be kept in view throughout the whole treatment. In such circumstances, these, with diuretics, which are then especially adapted to the case, will often be enough to effect a cure. When the state of body is of an opposite kind, the patient plethoric, or of a phlogistic diathesis, evacnants are indicated, and cathartics are here well adapted to the disease. But the degree in which one or other of these states may prevail is various, and the remedies and general management must be suited, with as much precision as possible, to each.

The exciting causes which exert their influence from without, such as cold, humidity, &c. are to be guarded against by warm clothing, &c. But unfortunately there are causes, the internal operation of which it is often difficult or impossible to counteract : such are morbid alterations of viscera, scirrhus, ossification, &c. ; and, though the effusion may have been removed, if these are present, they will very

certainly lead to its renewal. Topical determinations, or congestions of blood in particular organs, are to be treated by evacuants—such as venesection and cathartics; and epispastics may be beneficial. Mercury is peculiarly adapted to those dropsical affections which depend on chronic inflammation or obstruction; and when the liver, or some abdominal viscus, is implicated in this manner, it is the medicine of most efficacy in treating the disease. It is introduced by friction, or given internally conjoined with opium, or with squill or digitalis. Conium maculatum has been thought to be sometimes of benefit in such morbid conditions.

To restore the strength, and prevent the re-collection of hydropic fluid, was the *third* indication mentioned. This, of course, can only be done by a perseverance in such means as have already been described; that is, by endeavouring to avoid the fresh application of all debilitating causes, by the use of proper diet and exercise, and of corroborant medicines, and by being attentive to the general state of the functions. The watery secretions and excretions are particularly to be kept in due order, the discharge by the skin being promoted by warm clothing and exercise; and the renal function, for a considerable time after the removal of the dropsy, excited, if apt to become inactive, by the use of diuretic agents.

The alleviation of symptoms, which, according to the *last* indication, will sometimes be an object de-

serving particular attention, will be effected in different ways. Pain and other symptoms may require opium. Opium, indeed, seems sometimes to possess an especial efficacy as a diuretic; and probably its power in this way is sometimes to be accounted for from its acting as an antispasmodic, or from its removing pain. “*Inusitatum fortasse videbitur,*” says Mead, “*imo et periculōsum, remedia quæ ad somnum apta sunt, in hoc morbo adhibere.* At illa tamen interdum eum usum præstant, ut etiam urinam moventibus accensenda sint. Ubi enim magnus dolor premit, profusionem ejus haud raro incitant; non ob aliam, ut opinor, causam, quam quod fibras ductuum renalium relaxent, quas cruciatus semper constringit. Hujusce rei fidem faciet memorabilis, quam traditurus sum, narratio.

“Vir quidam robustus, sobrius, et temperantissimus, annorum circiter quadraginta, hydrope ascite simul et tympanite laborabat. Originem morbo dederat collisio, ab ictu violento ante sex fere septimanas, in dextro hypochondrio facta. Indies ventris tumor augebatur, cum dolore gravissimo, siti intensa, urina admodum pauca, eaque crassa, et rubra. Adhibita sunt cum a me ipso, tum ab alio medico experientissimo, remedia quæcunque ad urinam movendam utilia; sapo Venetus, salia lixivina, balsamum Gileadense, nitrum, et similia; at incassum omnia. A catharticis valentioribus in pejus ruebat malum. Paracentesis imperata est, sed renitebantur amici. Cum dolor jam esset intolerabilis, nec ulla spes de

vita afflueret; ut *ἐυθανασία* saltem consequeretur, de anodynis cogitare cœpi. Haustulum igitur cubitum ituro dabam bibendum, qui habebat aq. menth. piperitid. ʒj. cinnam. simpl. ʒss. spirit. ʒij. tinct. Thebaic. gutt. xxx. lixiv. tartari ʒss. syr. ex alth. ʒj. M. Ab illo insperatum levamen sensit; somnus, qui diu defecerat, obrepit; profluente per vices ea urinæ copia, ut illa nocte libræ minimum duæ redderentur. Hinc animus mire confirmatus est. Cumque æger, durante *ἀναλγησία*, tum per vesicam, tum per alvum, onus quod gravabat deponi; vi autem anodynæ finita, continuo redire, experiretur; jussus est eundem haustum octava quaque hora repetere, donec brevi bis die sumpsisse satis esset. Quum autem ab assiduo hujus usu minueretur appetitus, infusionis amaræ chalybeatæ cochlearia aliquot semel vel bis quotidie bibebat; nondum neglecto, si forte dolor ingrueret, divini pharmaci soporiferi usu. Hæc ita profecerunt, ut devoratis demum bis die pilulis aliquot ex pil. e styrac. portione una, corticis Peruviani portionibus duabus, cum terebint. chia confectis, perfecta restitueretur sanitas.”

Difficulty of breathing, risk of suffocation, or of coma and apoplexy, are to be treated by epispastics and venesection. Venesection may often be required for these symptoms, when other circumstances contra-indicate its use. It relieves the breathing, &c. by diminishing the quantity of blood, and therefore facilitating its passage through the lungs. The abstraction of blood is indeed sometimes a principal

curative means, though formerly it was by no means considered so. In the sthenic form of dropsy it is sometimes a necessary preliminary to all other means. Allusion was made to this subject when speaking of the causes of dropsy, as also when speaking of the different species of ascites ; and it is said, that this form of the disease, when occurring suddenly, and accompanied with phlogistic symptoms, absolutely requires abstraction of blood ; and that in some cases a speedy cure has been accomplished, principally to be attributed to this mode of practice. Suppression of the hæmorrhoidal or menstrual discharge is said sometimes to be followed by a dropsical affection of this kind. But that state of system which is adapted to blood-letting is confessedly rare in dropsical diseases, a diametrically opposite condition being by far more prevalent. The employment, therefore, of such a debilitating agent, is most commonly inadmissible, as respects the general system ; and, if it seems requisite for the alleviation of symptoms, it cannot be accompanied by too much caution—the hydropic diathesis being so liable to be augmented in consequence of it. When proper, however, venesection has been observed to have the effect of greatly promoting the operation of diuretics ; the squill, and other medicines of the class, being sometimes very efficacious after it has been premised.

For alleviating spasmodic difficulty of breathing, opium, the æthers, camphor, &c. may be useful, and are especially so in hydrothorax.

On a review of what has been written respecting dropsical diseases, it will appear that these are too often of very uncertain result ; that they are sometimes of a character, in respect of their origin, which renders them, in as far as medical knowledge has yet advanced, altogether irremediable, and only admitting of palliative treatment. In many other instances, however, there is nothing incurable in their nature ; and, by judicious means, the patient so situated may be, and sometimes speedily is, restored to complete health. And there have been instances of dropsy, in its very worst forms to all appearance, having been recovered from, after no such expectation had been entertained. The remedies which we possess for the treatment of dropsical diseases, are, it has appeared, very numerous, and of dissimilar properties : and, having laid down the principles which regulate the management of the affection in its various forms, it only remains to add, that a proper choice and adjustment to circumstances in each example which may occur, of the curative means and methods which have been pointed out, must after all be left, in a good measure, to the judgment of the physician respecting the particular case. Sometimes one plan will answer better, sometimes another ; and sometimes a combination of methods may be advisable and proper.



